



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,394	06/25/2003	Frank Westendorf	7781.0084-00	4798
22852	7590	01/15/2008		
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER MITCHELL, JASON D	
			ART UNIT 2193	PAPER NUMBER
			MAIL DATE 01/15/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/606,394

Applicant(s)

WESTENDORF ET AL.

Examiner

Jason Mitchell

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 13 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 January 1948 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-48 are pending in this application.

Response to Arguments

2. **Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.**

Further, in the paragraph bridging pp. 15-16 Applicant states "Lindholm is directed to describing the Java programming language". This is a misrepresentation of the disclosure of Lindholm which is actually directed to describing the Java virtual machine (JVM). While the JVM is commonly used to execute applications written in Java, as discussed further in the rejection any language can be compiled into 'bytecode' to be executed on the JVM (pg. 339, 2nd par. 7 "the Java Virtual Machine does not assume that the instructions it executes were generated from Java source code. [and] there have been a number of efforts aimed at compiling other languages").

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Art Unit: 2193

Claims 1, 16 and 31 recite in relevant part "creating an application using a non-object-oriented development language by: defining one or more classes of objects ... having one or more methods". Those of ordinary skill in the art would have recognized classes having methods as object oriented constructs. Accordingly, without more, the claim language gives rise to some confusion regarding how one would define object-oriented constructs using a non-object-oriented language or why a language capable of providing such definitions would not be considered object-oriented. Thus, the metes and bounds of the claimed 'defining' are not made sufficiently clear.

Claims 2-15, 17-30 and 32-48 each depend from one of claims 1, 16 and 31 and are rejected for the same reasons.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over "The Java Virtual Machine Specification" by Lindholm et al. (Lindholm).**

7. **Regarding Claim 1, 16, 31:** Lindholm discloses:

defining one or more classes of objects, the classes having one or more methods for performing operations on the objects (pg. 30, 2.13 Interfaces "An interface is a reference type whose members are constants and abstract methods.");

creating one or more objects of the one or more classes, each object having an identifier within its class (pg. 30, 2.13 Interfaces "classes can implement [an interface] by providing implementations for its abstract methods."; pg. 9, 2.4.5 Reference Types, Objects, and Reference Values "There are three kinds of reference types: ... the interface types (§2.13) ... An object is a dynamically created class instance ... The reference values ... are pointers to these objects");

creating a tool having at least one function for providing an executable solution to the one or more methods of the one or more classes, whereby the at least one function is assigned to one or more methods of the one or more classes (pg. 30, 2.13 Interfaces "A class may be declared to directly implement one or more interfaces, meaning that any instance of the class implements all the abstract methods specified by that interface."), the tool includes a first attribute associated with a first executable solution of the at least one function and a second attribute associated with a second executable solution of the at least one function (pg. 84, ClassFile "ClassFile { ... field_info fields [fields_count];"; pg. 102, 4.5 Fields "field_info { u2 access_flags ...}"), the first attribute is modifiable by a first user (pg. 102, 4.5 Fields "ACC_PRIVATE ... is private") and the second attribute is modifiable by a second user (pg. 102, 4.5 Fields "ACC_PUBLIC ... Is public"), and the second user is prevented from modifying the first attribute (pg. 102, 4.5 Fields "Is private; usable only within the defining class"); and

assigning the tool to one of the one or more objects of the one or more classes by using the identifier of the object (pg. 30, 2.13 Interfaces "It is not sufficient that the class happens to implement all the abstract methods of the interface; the class ... must actually be declared to implement the interface, or else the class is not considered to implement the interface."; pg. 258, invokeinterface "Stack ..., objectref, par1, [arg2 ...]]").

8. Lindholm does not explicitly disclose creating an application using a non-object-oriented development language. However Lindholm discloses that while "[T]he Java Virtual Machine is designed to support the Java programming language ... the Java Virtual Machine does not assume that the instructions it executes were generated from Java source code.[and] there have been a number of efforts aimed at compiling other languages" pg. 339, 2nd par.)

9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to create an application using a non-object oriented language using the methods disclosed by Lindholm (i.e. compile and run it using a virtual machine). Those of ordinary skill in the art would have been motivated to do so in order to provide the benefits of a virtual machine (pg. 2, 3rd full par. "The ... Virtual Machine is ... responsible for Java's cross-platform delivery, the small size of its compiled code, and Java's ability to protect users from malicious programs") to a non-object oriented

language (pg. 339, 2nd par. "there have been a number of efforts aimed at compiling other languages").

10. **Regarding Claims 2, 17, and 32:** The rejections of claims 1, 16, and 31 are incorporated, respectively; further Lindholm discloses assigning the tool to an object is performed based on a table (pg. 92, 4.4 Constant Pool) wherein the tool is associated with one or more identifiers (pg. 148, 5.3 Interface Method Resolution "A constant pool entry tagged as CONSTANT_InterfaceMethodref (§4.4.2) represents a call to an instance method declared by an interface.").

11. **Regarding Claims 3, 18, and 33:** The rejections of claims 1, 16, and 31 are incorporated, respectively; further Lindholm discloses assigning the tool to an object is performed based on a table (pg. 92, 4.4 Constant Pool) wherein the tool is associated with one or more identifiers (g. 148, 5.3 Interface Method Resolution "A constant pool entry tagged as CONSTANT_InterfaceMethodref (§4.4.2) represents a call to an instance method declared by an interface.") and wherein the tool is assigned to objects of only one class (see pg. 30, 2.13 Interfaces "A class may be declared to directly implement one ... interfaces").

12. **Regarding Claims 4, 19, and 34:** The rejections of claims 1, 16, and 31 are incorporated, respectively; further Lindholm discloses the identifier is unique within its class (pg. 258, invokeinterface "The method table of the class of the type of objectref is

Art Unit: 2193

determined.”). Note that objectref is a pointer to a memory location (pg. 9, 2.4.5

Reference Types, Objects, and Reference Values “An object is a dynamically created class instance ... The reference values ... are pointers to these objects”) and thus is unique within the system and inherently anticipates a unique reference within the class.

13. **Regarding Claim 5-8, 20-23, 35-38:** The rejections of claim 1-4, 16-19, 31-34 are incorporated, respectively; further Lindholm discloses the at least one function comprises a reference to an executable code (pg. 84, ClassFile “ClassFile { ... method_info methods[methods_count];”).

14. **Regarding Claims 9-12, 24-27, and 39-42:** The rejections of claims 1-4, 16-19, and 31-34 are incorporated, respectively; further Lindholm discloses the at least one function comprises a reference to a first data array that stores information relating to the technical attribute for the at least one function and a reference to a second data array that stores information relating to the business attribute for the at least one function (pg. 9, “Flags varchar(15)”; par. [0236] The attributes of each class ... is stored in this table”).

15. **Regarding Claims 13-15, 28-30, and 43-45:** The rejections of claims 1-3, 16-18, and 31-33 are incorporated, respectively; further Lindholm discloses the tool comprises a reference to a data array that stores information relating to an attribute for at least two functions of the tool (pg. 9, “Flags varchar(15)”; Note that the ‘Flags’ array is associated

Art Unit: 2193

with a class id (Cid) and thus is available, and "related" to all methods of the class and thus would be recognized as teaching a the claimed "relating to ... at least two functions").

16. Claims 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over "The Java Virtual Machine Specification" by Lindholm et al. (Lindholm) in view of US 2002/0049603 to Mehra et al. (Mehra).

17. Regarding Claims 46-48: Lindholm discloses creating a tool having at least one function for providing an executable solution to the one or more methods of the one or more classes, whereby the at least one function is assigned to one or more methods of the one or more classes (pg. 30, 2.13 Interfaces "A class may be declared to directly implement one or more interfaces, meaning that any instance of the class implements all the abstract methods specified by that interface."); and

18. Lindholm does not disclose a technical attribute associated with a first executable solution or a business attribute associated with a second executable solution wherein the business attribute is modifiable by a non-programmer and the technical attribute is not.

Art Unit: 2193

19. Mehra teaches metadata indicating that an attribute is, or is not modifiable by a non-programmer (see the table in col. 2 of pg. 9, "Flags ... 7th bit => Customization bit. ... can be customized by end user").

20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lindholm to include metadata defining technical and business attributes as taught by Mehra (par. [0229] "the meta-data store"; par. [0236] "The attributes of each class ... is stored in this table"; pg. 9, "Flags") in order to provide a system "flexible enough to allow individual business users to add custom data to business objects which are EJB compliant" (Mehra par. [0012]).

Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Art Unit: 2193

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Mitchell whose telephone number is (571) 272-3728. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Mitchell/
Jason Mitchell
1/8/08


MENG-AI AN
SUPERVISORY PATENT EXAMINER
BIOLOGY CENTER 2100